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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,147

08/20/2007

Kazuaki Yoshida

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05/06/2008

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EXAMINER

HEVEY, JOHN A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

05/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,147	Applicant(s) YOSHIDA, KAZUAKI	
	Examiner JOHN A. HEVEY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/14/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Status of Application

Claims 1-4 are pending and presented for examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Cossaboon et al. (US5769689).

In regards to claim 1, Cossaboon et al. ("Cossaboon") teaches a polishing composition comprising, water, submicron SiO₂ particles, a soluble inorganic salt and as a basic element, a soluble amine (see claim 1).

In regards to claim 2, Cossaboon teaches specific examples including NH₄NO₃ as a soluble inorganic salt (see table 4).

In regards to claim 3, Cossaboon teaches that said soluble inorganic salt is added at a concentration below the critical coagulation concentration (see claim 1).

In regards to claim 4, Cossaboon teaches a method of polishing comprising adding continuously a polishing composition as described above between a polishing pad and a workpiece (see claim 10 and example 6).

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida et al. (US6300249).

In regards to claims 1-2, Yoshida et al. ("Yoshida") teaches a polishing composition comprising colloidal silica, a base, additives, and water (see col. 5, lines 39-41) wherein specific examples teach the addition of K_2SO_4 as a base, additionally reading on alkali metal salt as required by claim 2 (see example 2 and table 2).

In regards to claim 3, Yoshida teaches an optimized composition of silica particles and optimized range of pH to prevent quick gellation and to prevent flocculating of the silica particles (see col. 3, lines 62 to col. 4, line 27).

In regards to claim 4, Yoshida teaches a method of polishing comprising adding a polishing composition as described above continuously between a workpiece and a polishing pad (see col. 5 line 48 to col. 6, line 27).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US6312487).

In regards to claims 1-2, Tanaka teaches a polishing compound composition comprising a dispersion of silica particles, a metal compound other than silicon oxide, water, a pH buffer comprising an acid and a base, and additives (see claim 3). The reference teaches examples of said additive to include K_2CO_3 , $KHCO_3$, and K_2SO_4 (see Table 1-1). Thus, it would have been obvious to one of ordinary skill in the art to select a composition comprising silica particles, water, a basic material, and an alkali metal salt such as K_2SO_4 .

In regards to claim 3, Tanaka teaches the pH of the polishing compound is tailored to prevent flocculation of silica particles (see col. 5, lines 14-20).

In regards to claim 4, Tanaka teaches a method of polishing comprising adding at a continuously flow rate a polishing compound as described above to a workpiece which is polished by a rotating polishing pad (see col. 7, lines 1-21).

Thus it would have been obvious to one of ordinary skill in the art to perform a polishing method comprising continuously feeding a polishing composition comprising particles, water, a basic material, and an alkali metal salt such as K_2SO_4 between a polishing pad and a polishing sample. One would have been motivated to do so in order to achieve a high polishing speed of a sample such as a silicon wafer (see col. 9, lines 45-50).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN A. HEVEY whose telephone number is (571)270-3594. The examiner can normally be reached on Monday - Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry A Lorengo/
Supervisory Patent Examiner, Art Unit 1793

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